Tree Preservation Training

August 13, 2010

Tree Preservation Ordinance

- Approved by City Council May 6, 2010
- Effective June 1, 2010
- All preservation plans approved before June 1, 2010 and remain active will continue to follow the past Tree Ordinance.

New Tree Ordinance Goals

- Increase preservation of trees
- Eliminate existing single-family & agricultural loopholes
- Increase Tree Canopy

Tree Stakeholder Committee

- **Members:**
  - San Antonio Conservation Society – Barbara Hall
  - San Antonio Real Estate Council – Rick McNealy
  - Greater San Antonio Builders Association –Jim Leonard
  - Greater San Antonio Builders Association – Trey Marsh
  - Citizens Tree Coalition – Richard Alles
  - Community at Large (Planning Commission) – Amy Hartman
  - Community at Large – Dr. Francine Romero
  - Technical Advisory Committee – Christopher Lindhorst
  - Northeast Independent School District – Walter Scott
  - Northside ISD – Bill Peters
  - NS Neighbors for Organized Development – Chuck Saxer
  - Regional Forester – Paul Johnson
- Total of 10 meetings

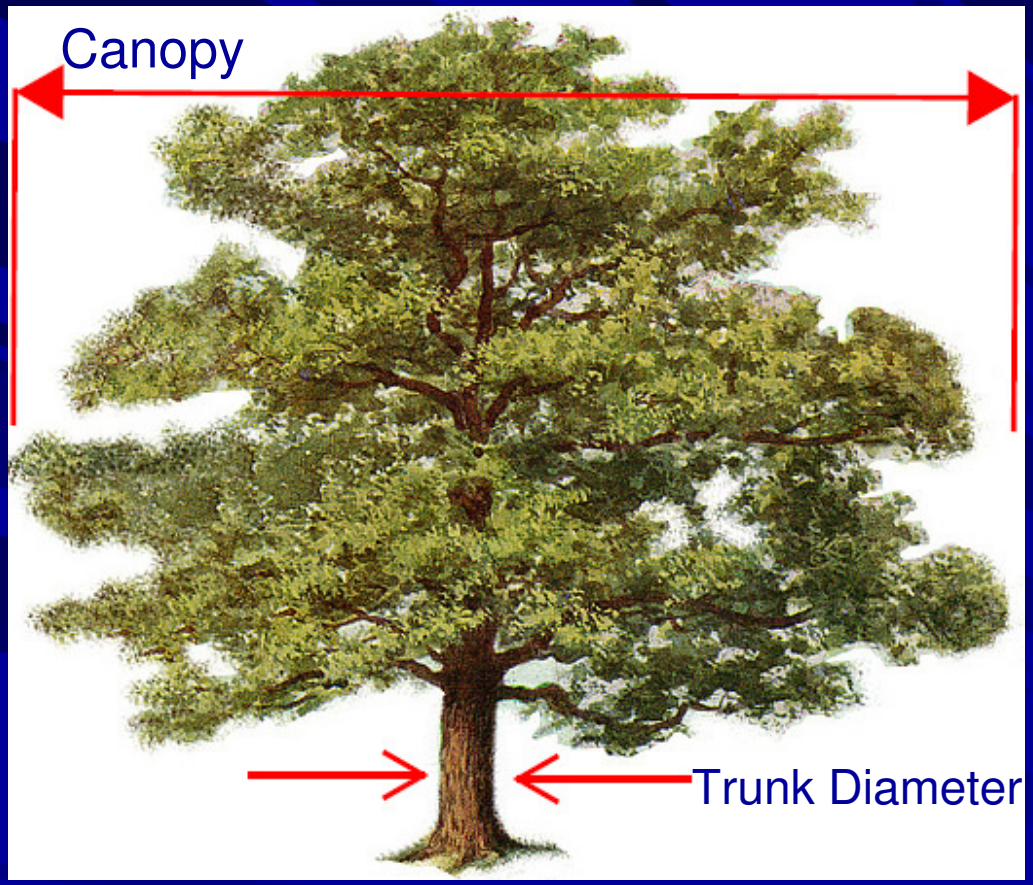
Approach

- **Phase I** was adopted on October 29, 2009 and established additional preservation requirements in **Environmentally Sensitive Areas (ESA)**:
  - Preserves trees on steep slopes (greater than 20%)
  - Creates a buffer around the regulatory floodplain:
    - 60 feet wide in Edwards Recharge Zone and Contributing Zone
    - 30 feet wide elsewhere in the City and ETJ
- **Phase II** will establish a minimum tree canopy and increase preservation

2006 Tree Ordinance

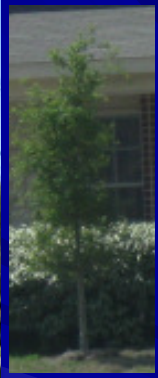
- 2006 Tree Preservation Ordinance:
  - Significant trees (6” or greater):
    - 35% for residential & 40% for commercial
      - Mitigation at 1:1 ratio, up to 90%
    - Percentages are *net,* exclude rights of way and easements
  - Heritage trees (24” or greater) protected 100%
    - Mitigation allowed at 3:1 ratio, up to 90%
  - Mitigation at $100 per inch

Tree Measurement



Heritage
24 inches & larger

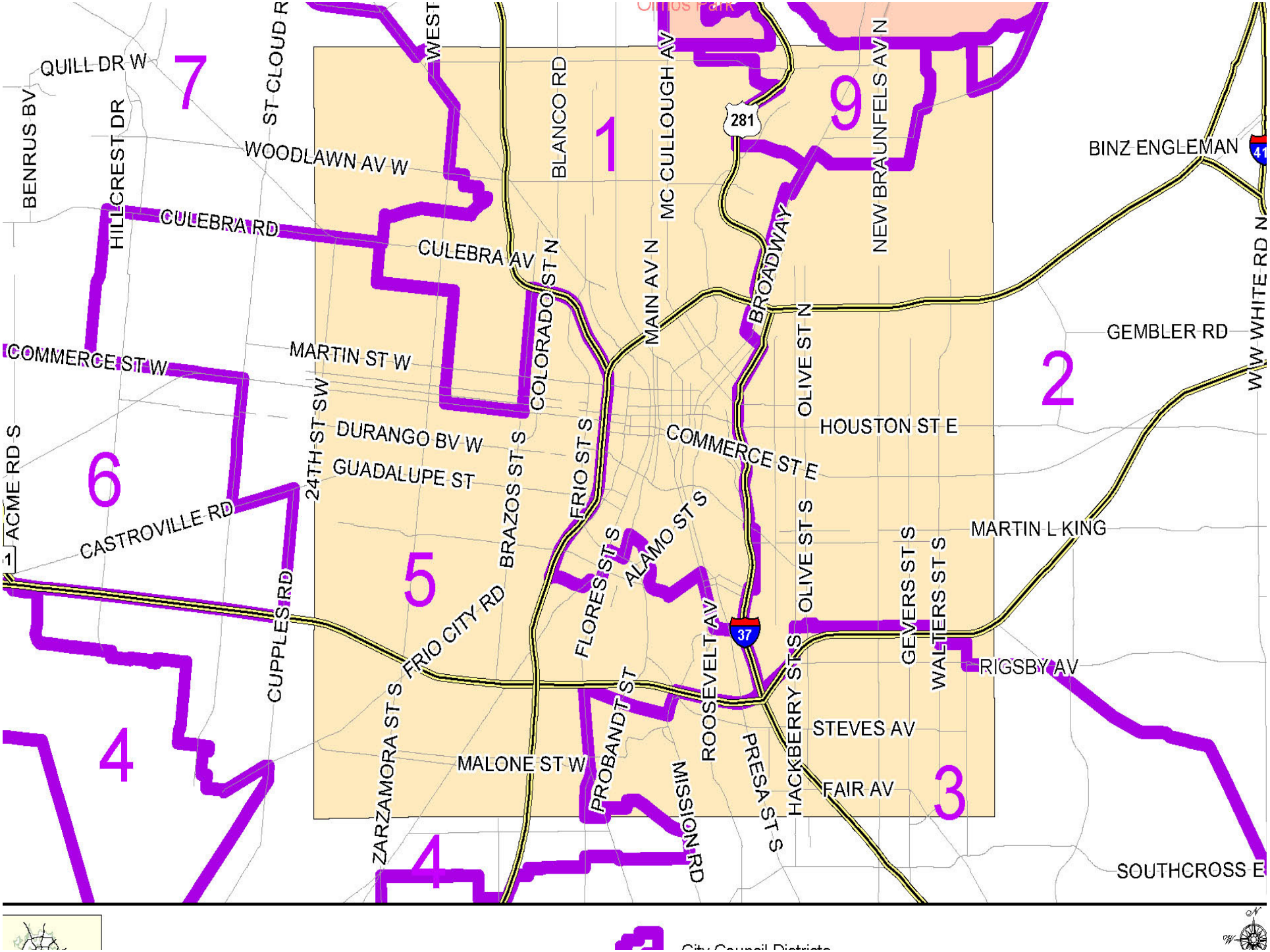
Significant
6 to 23 inches



Newly Planted
2 inches

Phase II Amendments: 2010 Tree Ordinance

- Minimum Preservation increase from 10% to 20%
- Double Mitigation from $100/inch to $200/inch
- Final tree canopy requirement:
  - Single-family Residential = 38%
  - Multi-family and Nonresidential = 25%
  - CRAG area = 15%
- Tree Credits may only be used for mitigation for preservation when utilizing the tree survey method


QUILL DR W
BENRUS BV
HILLCREST DR
ST CLOUD R
WEST
WOODLAWN AV W
CULEBRA RD
CULEBRA AV
BLANCO RD
MC CULLOUGH AV
281
NEW BRAUNFELS AV N
BINZ ENGLEMAN
41
BROADWAY
MAIN AV N
COLORADO ST N
OLIVE ST N
GEMBLER RD
WW WHITE RD N
COMMERCE ST W
MARTIN ST W
24TH ST SW
DURANGO BV W
GUADALUPE ST
HOUSTON ST E
COMMERCE ST E
ACME RD S
CASTROVILLE RD
BRAZOS ST S
FRIO ST S
FLORES ST S
ALAMO ST S
OLIVE ST S
GEVERS ST S
WALTERS ST S
MARTIN L KING
CUPPLES RD
FRIO CITY RD
37
RIGSBY AV
ROOSEVELT AV
HACKBERRY ST S
STEVES AV
ZARZAMORA ST S
MALONE ST W
PROBANDT ST
MISSION RD
PRESA ST S
FAIR AV
SOUTHCROSS E
1
2
3
4
5
6
7
9

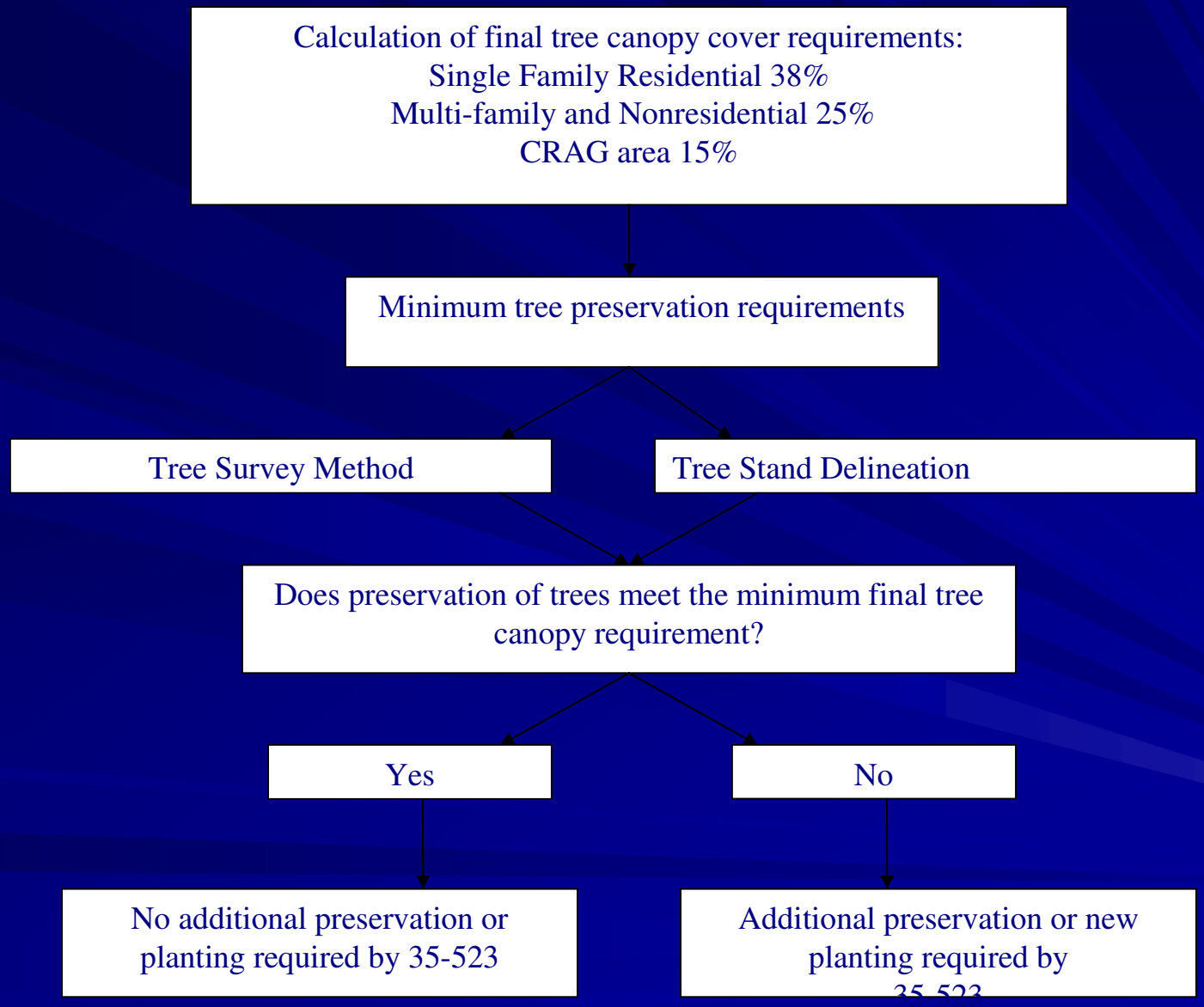
Phase II Amendments - cont'd

- Additional amendments to facilitate attainment of long-lasting tree canopy
  - Assign a discount value to newly planted trees at 90% of shade value to account for survivability
  - Reduce minimum diameter size from 3" to 1 ½" for improved survivability of new plantings
  - Exempt athletic fields from the final tree canopy requirements
  - Heritage Trees required to be counted under Tree Stand Delineation Method
  - Minimum requirement of 0.5 acre area for steep slopes under the Environmental Sensitive Areas
  - Continue to exempt single family residential

Phase II Amendments Cont

- Additional amendments to facilitate attainment of long-lasting tree canopy
  - Limit replacement trees to no more than 25% of same species
  - Up to 200% bonus credits available for tree canopy and preservation for:
    - Low Impact Design (LID) stormwater management
    - Energy conservation
    - Woodlands canopy and understory preservation
    - Preserving beyond minimum requirements for significant and heritage trees

Hierarchy

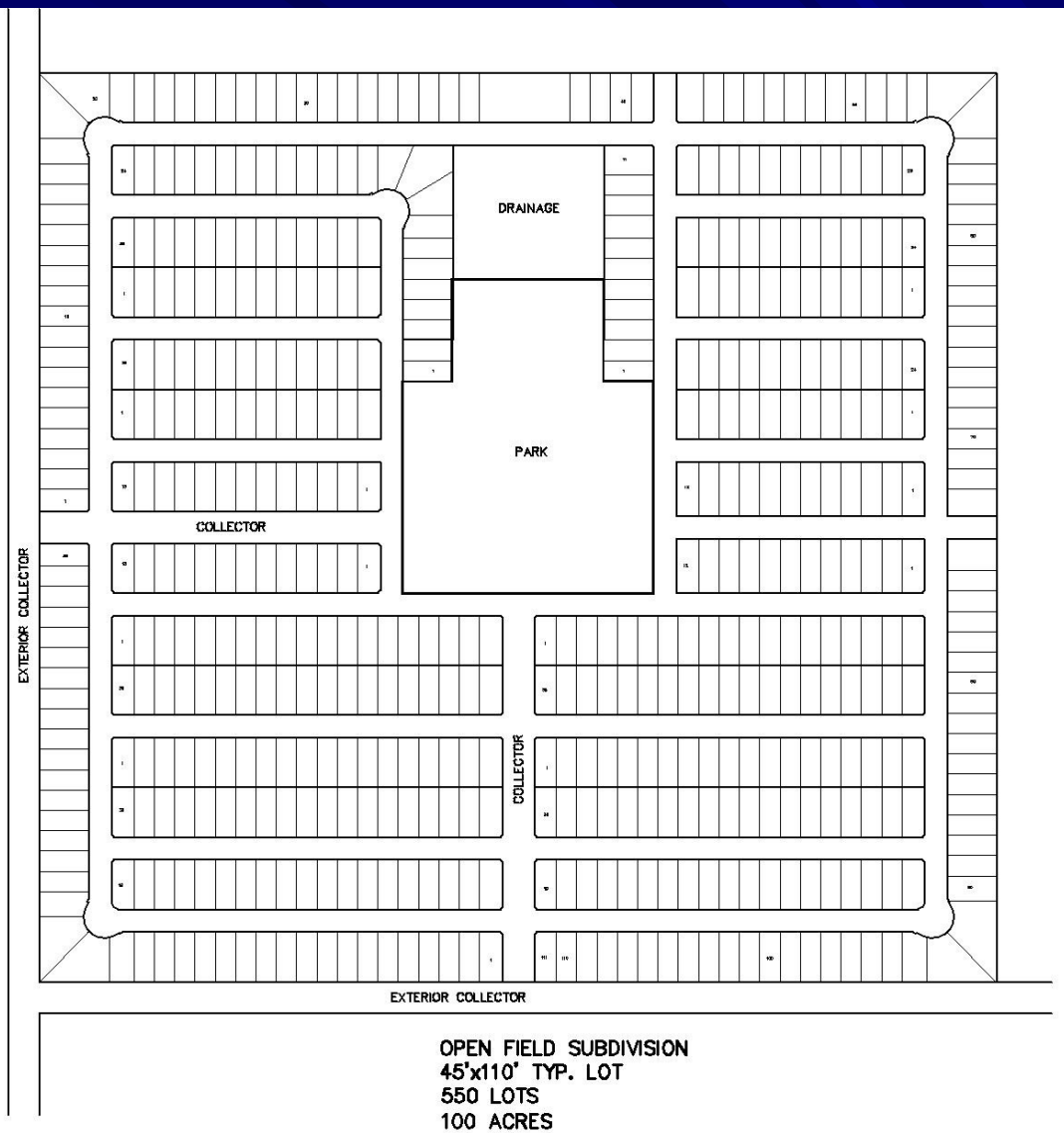

Calculation of final tree canopy cover requirements:
Single Family Residential 38%
Multi-family and Nonresidential 25%
CRAG area 15%
Minimum tree preservation requirements
Tree Survey Method
Tree Stand Delineation
Does preservation of trees meet the minimum final tree canopy requirement?
Yes
No
No additional preservation or planting required by 35-523
Additional preservation or new planting required by

Residential Impacts

- Vary depending on lot size, development density and preservation
- 4,000 sq ft = 2-3 trees
- 5,000 sq ft = 2-3 trees
- 6,000 sq ft = 3-4 trees

  (one or two more than the 2 trees already required per lot)

100 ACRE - 45’ X 110’ LOTS



90% SHADE VALUE 45’ LOT

OPEN FIELD SUBDIVISION - LOTS 45' x 110'

TRACT SIZE	100	ACRES
NO. OF LOTS (45' x 110')	550	LOTS
PARK REQUIRED 1 ACRE PER 70 LOTS	7.9	ACRES
COLLECTOR ROAD	1560	FEET
EXISTING CANOPY	0	ACRES

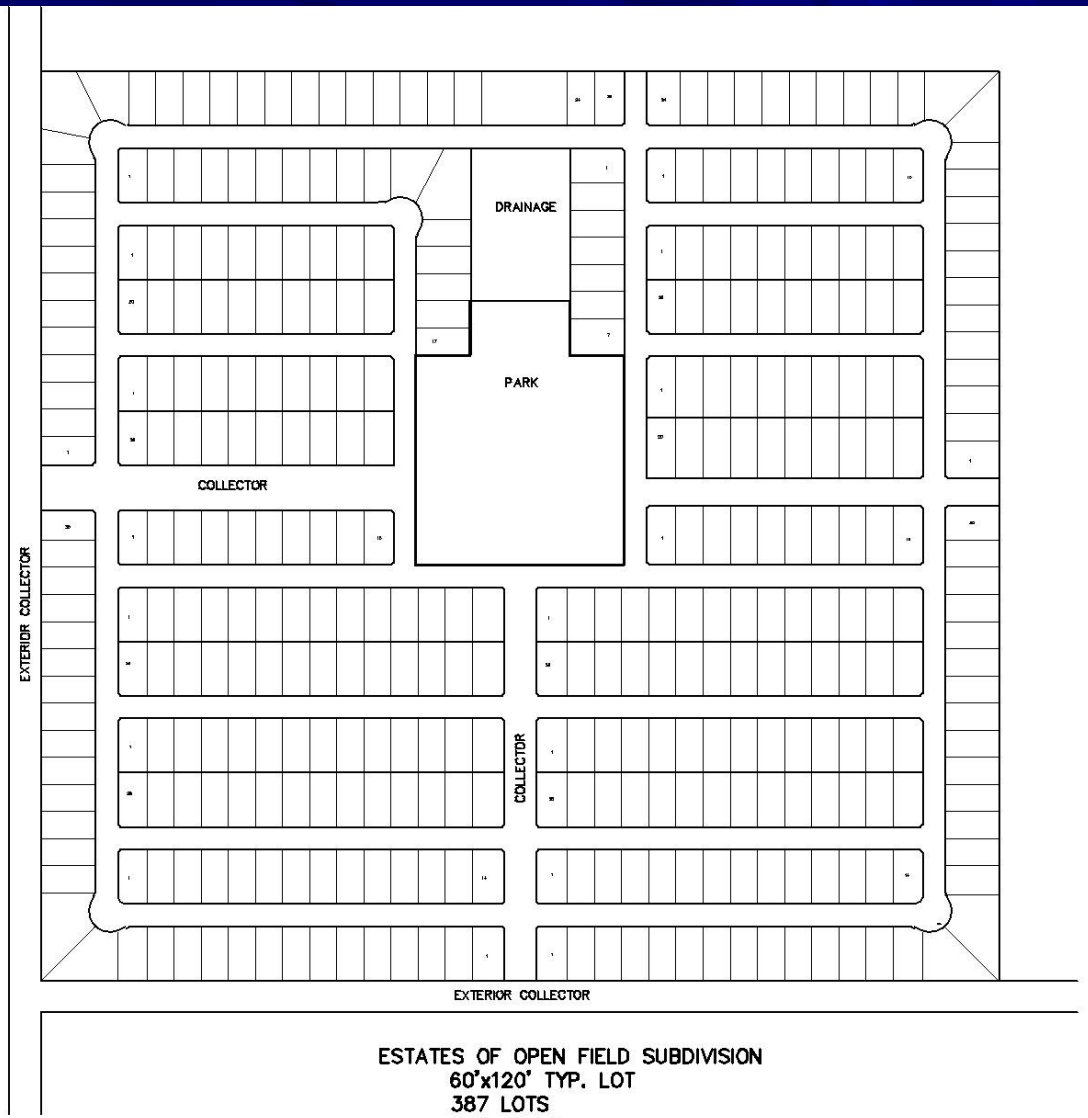
38% CANOPY - 75% FOR NEW TREE	38 ACRES =	1,655,280	SQ. FT.

CANOPY ADDED	NO. TREES	SQ. FT.	CREDIT %	SQ. FT.
STREETSCAPE	62	875	90%	48,825
TREES IN LOT - NO CONSERVATION CREDIT	860	875	90%	677,250
TREES IN LOT - SOUTH OR WEST 1.5 CREDIT	767	875	90% x 1.5	906,019
SUB-TOTAL	1689			1,632,094

CANOPY REQUIRED TO BE PLACED				1,655,280
LESS PROVIDED				-1,632,094
SUB-TOTAL REMAINING				23,186
NUMBER OF TREES TO ADD IN PARK	30	875	90%	23,625
TOTAL NUMBER OF TREES	1,719	17.19 per acre avg		

PLANTING 62 LARGE STREETSCAPE TREES (2 PER 50')
PLANTING THREE LARGE TREES PER LOT
WITH 767 GETTING 1.5 CONSERVATION CREDIT
AVG OF 3.0 TREES PER LOT
45% OF LOT TREES GET SOUTH OR WEST X 1.5 INCREASE
REQUIRED PLANTING OF 30 LARGE TREES IN PARK

60’ X 120’ LOTS



ESTATES OF OPEN FIELD SUBDIVISION
60'x120' TYP. LOT
387 LOTS
100 ACRES
5.50 ACRE PARK

90% SHADE VALUE 60’ LOT

ESTATES OF OPEN FIELD SUBDIVISION - LOTS 60' x 120'

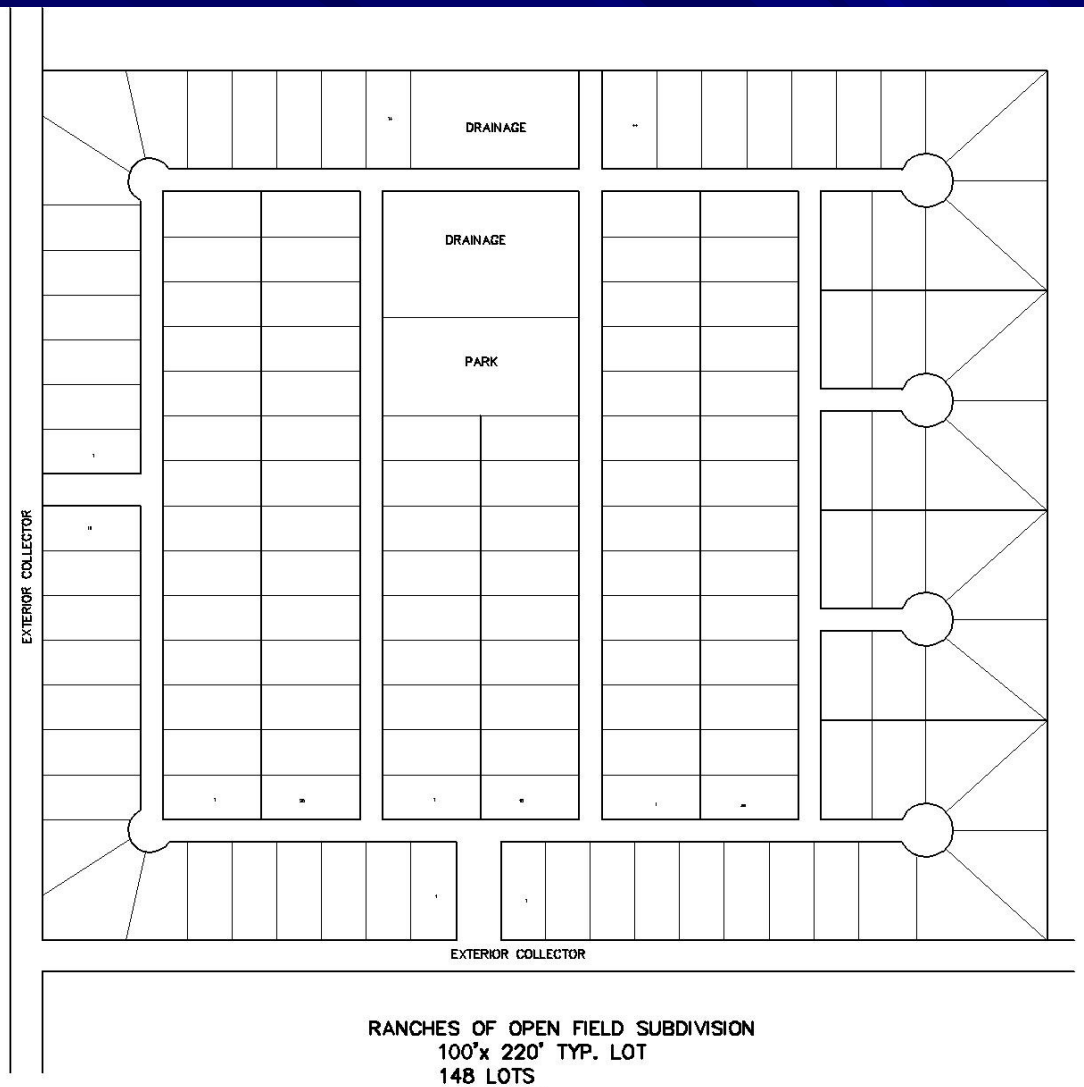
TRACT SIZE	100	ACRES
NO. OF LOTS (60' x 120')	387	LOTS
PARK REQUIRED 1 ACRE PER 70 LOTS	5.5	ACRES
COLLECTOR ROAD	1660	FEET
EXISTING CANOPY	0	ACRES

38% CANOPY - 75% FOR NEW TREE	38 ACRES =	1,655,280	SQ. FT.

CANOPY ADDED	NO. TREES	SQ. FT.	CREDIT %	SQ. FT.
STREETSCAPE	64	875	90%	50,400
TREES IN LOT - NO CONSERVATION CREDIT	700	875	90%	551,250
TREES IN LOT - SOUTH OR WEST 1.5 CREDIT	858	875	90% x 1.5	1,013,513
SUB-TOTAL	1,622			1,615,163
CANOPY REQUIRED TO BE PLACED				1,655,280
LESS PROVIDED				-1,615,163
SUB-TOTAL REMAINING				40,117
NUMBER OF TREES TO ADD IN PARK	51	875	90%	40,163
TOTAL NUMBER OF TREES	1,673	16.73	trees per acre avg	

PLANTING 64 LARGE STREETSCAPE TREES (2 PER 50')
PLANTING 4 LARGE TREES PER
WITH 858 GETTING 1.5 CONSERVATION CREDIT
AVG OF 4.0 TREES PER LOT
52% OF LOT TREES GET SOUTH OR WEST X 1.5 INCREASE
REQUIRED PLANTING OF 51 LARGE TREES IN PARK

100 ACRE - ½ ACRE LOTS



RANCHES OF OPEN FIELD SUBDIVISION
100'x 220' TYP. LOT
148 LOTS
100 ACRES
2.1 ACRE PARK

90% SHADE VALUE ½ ac. LOT

RANCHES OF OPEN FIELD SUBDIVISION - 1/2 ACRE LOTS 100' x 220'		
TRACT SIZE	100	ACRES
NO. OF LOTS (45' x 110')	148	LOTS
PARK REQUIRED 1 ACRE PER 70 LOTS	2.1	ACRES
COLLECTOR ROAD	480	FEET
EXISTING CANOPY	0	ACRES

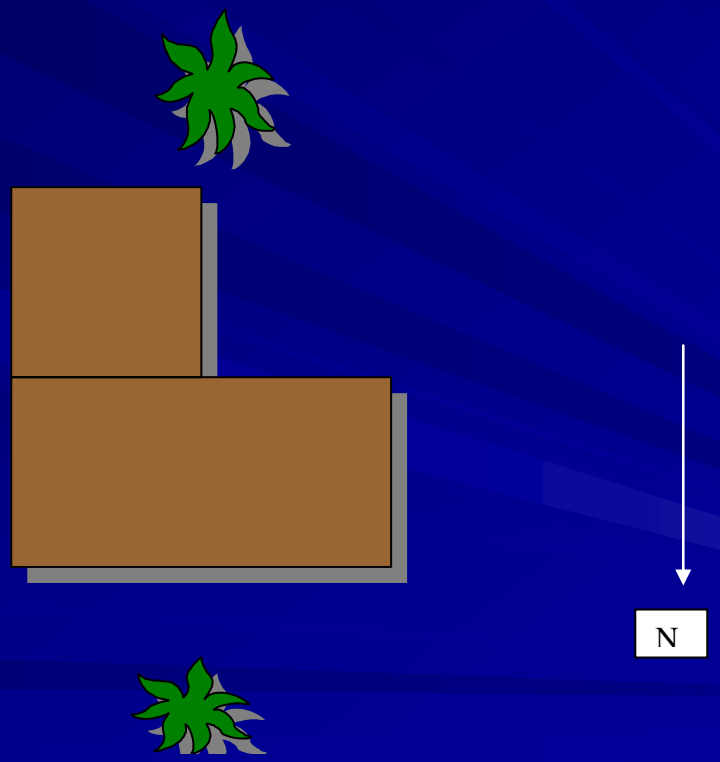
38% CANOPY - 75% FOR NEW TREE	38 ACRES =	1,655,280	SQ. FT.

CANOPY ADDED	NO. TREES	SQ. FT.	CREDIT %	SQ. FT.
STREETSCAPE	20	875	90%	15,750
TREES IN LOT - NO CONSERVATION CREDIT	1196	875	90%	941,850
TREES IN LOT - SOUTH OR WEST 1.5 CREDIT	580	875	90% x 1.5	685,125
SUB-TOTAL	1,796			1,642,725
CANOPY REQUIRED TO BE PLACED				1,655,280
LESS PROVIDED				-1,642,725
SUB-TOTAL REMAINING				12,555
NUMBER OF TREES TO ADD IN PARK	16	875	90%	12,600
TOTAL NUMBER OF TREES	1,812	18.12 trees per acre avg		

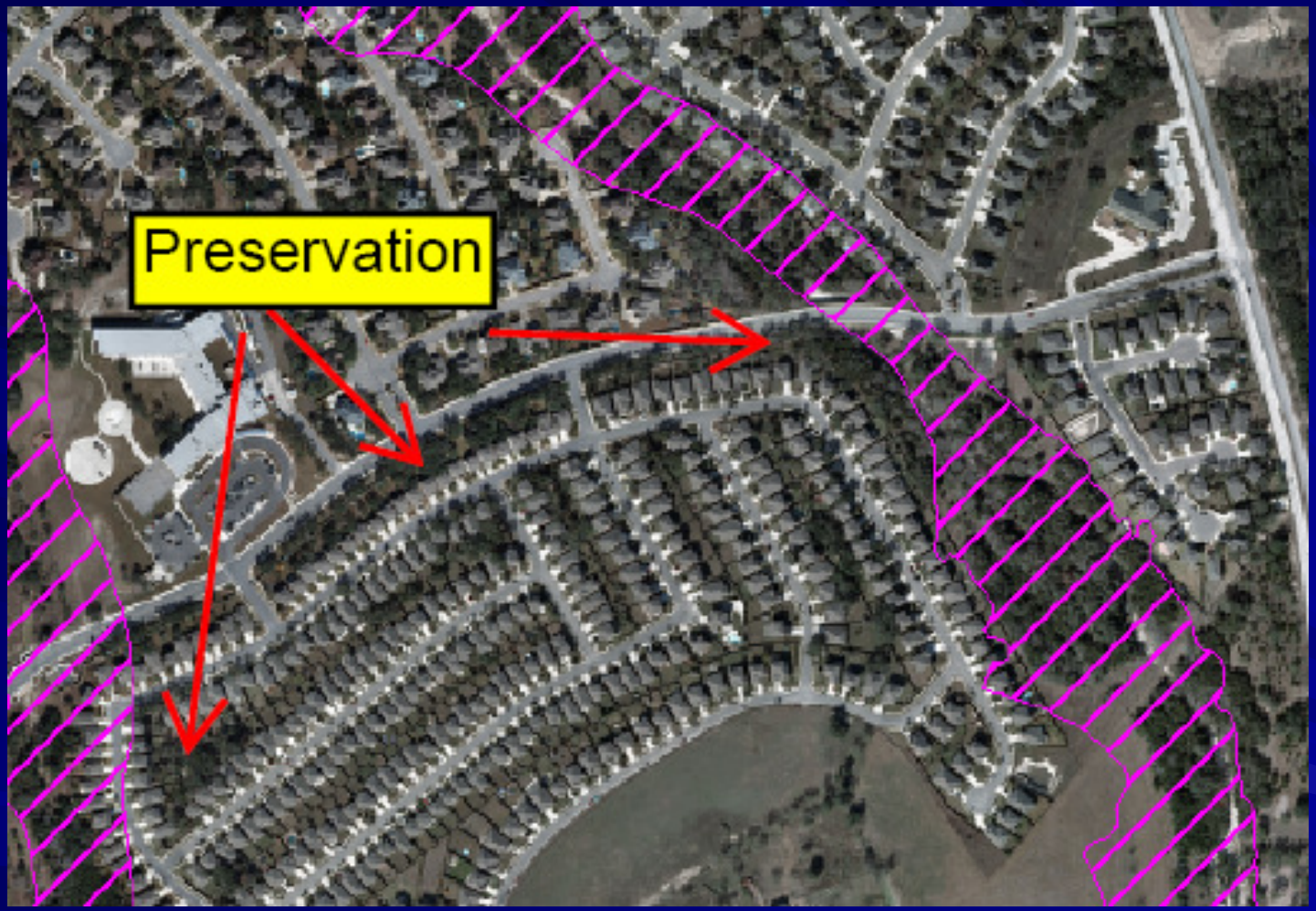
PLANTING 20 LARGE STREETSCAPE TREES (2 PER 50')
PLANTING 1776 LARGE TREES ON LOTS
WITH 580 GETTING 1.5 CONSERVATION CREDIT
AVG OF 12 TREES PER LOT
32% OF LOT TREES GET SOUTH OR WEST X 1.5 INCREASE
REQUIRED PLANTING OF 16 LARGE TREES IN PARK

Single Family Residential

Lot size - 5100 sqft x 38% = 1938 sqft canopy rq'd
1 Live oak (*South) 875 sqft x 90% = 788 sqft x 1.5 = 1181 sqft
***Energy Conservation Credit for planting on South side**
1 Cedar elm (North) 875 sqft x 90% = 788 sqft
Required Final Canopy = 1938 sqft
2 tree total = 1969 sqft



Residential Development

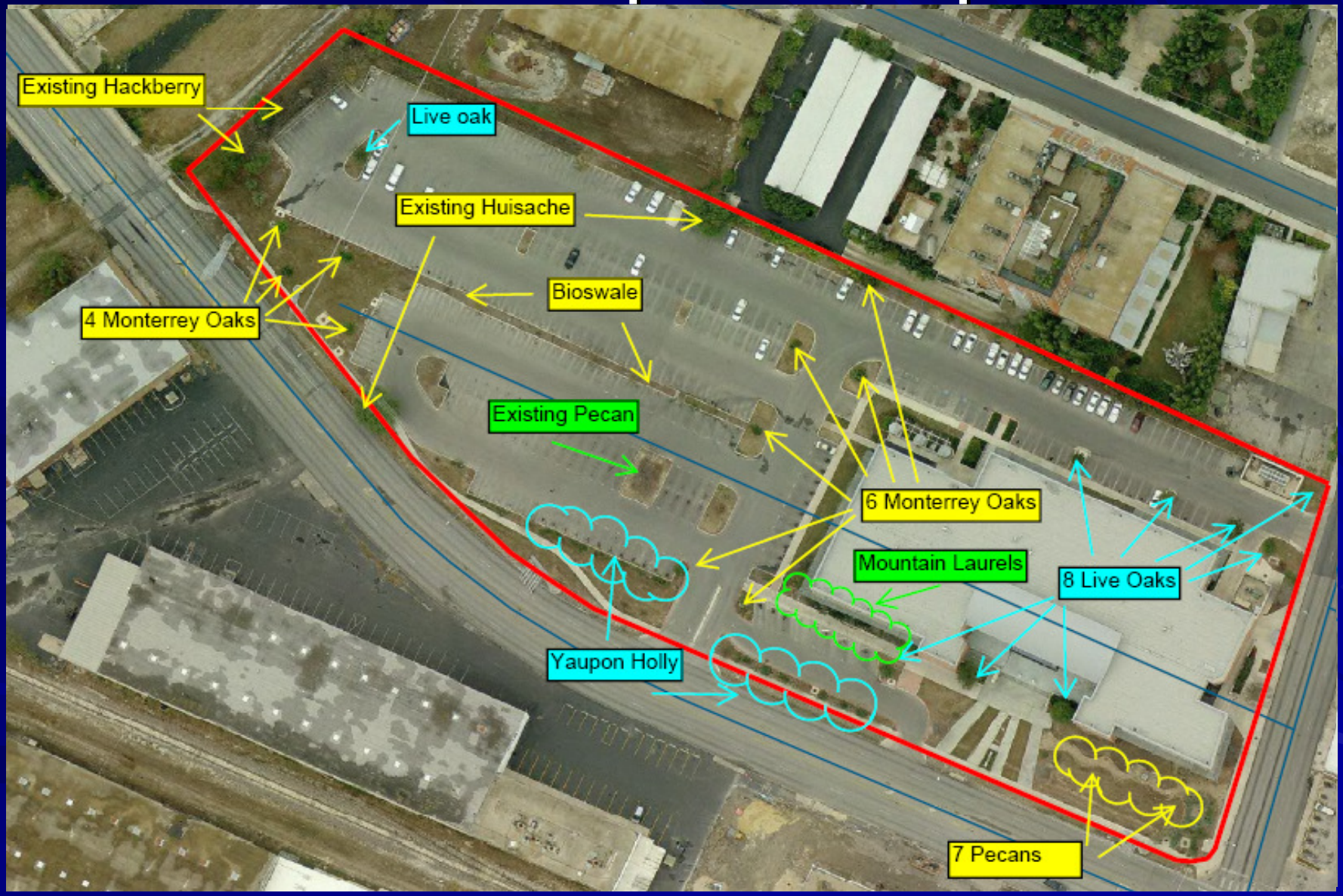


Preservation in green belts or green space.

Commercial

- Landscape electives that can apply to Final Tree Canopy:
- Parking lot shading: minimum 25% shading required for parking area based on Appendix E (50-100% credit)
- Street trees: along frontage, minimum every 50’
- Preservation: 100% credit with required RPZ (root protection zone)

“One Stop” Example



One Stop Shop

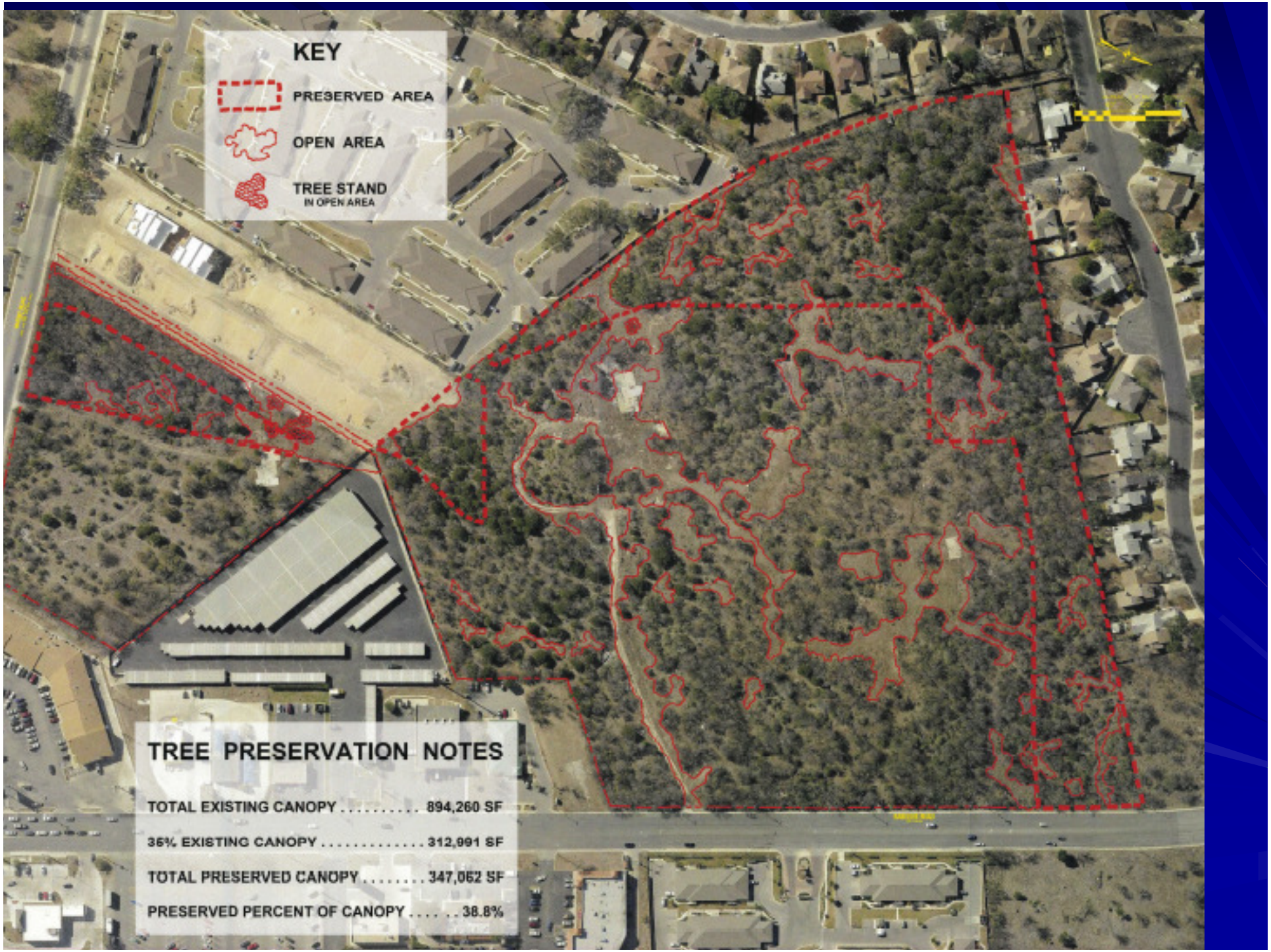
- 1st step: survey existing trees
  - approximately 15% existing canopy in 5.3 acre tract
  - preserved 20% of existing trees
  - planted approx. 9 to 11 trees to mitigate back to 40%
- 2nd step: final canopy
  - meet parking shade requirements = 28 trees
  - meet streetscape requirements = 24 trees
  - calculate canopy coverage = 25% (exceeded CRAG area)
- One Stop Shop:
  - Planted additional 22 trees
  - met 32.5% of tree canopy
  - 7.5% above commercial for City and ETJ
  - 17.5% above CRAG requirements

One Stop

- 5.3 acres = 230,868 sqft
- 15% CRAG Final Canoy = 34,630 sqft
- 25% Commercial Final Canopy = 57,717 sqft
- Total existing tree canopy = 34,630 sqft
- 40% preservation required = 13,852 sqft
- Total preserved tree canopy = 6926 sqft (20%)
- Mitigation = 6926 sqft

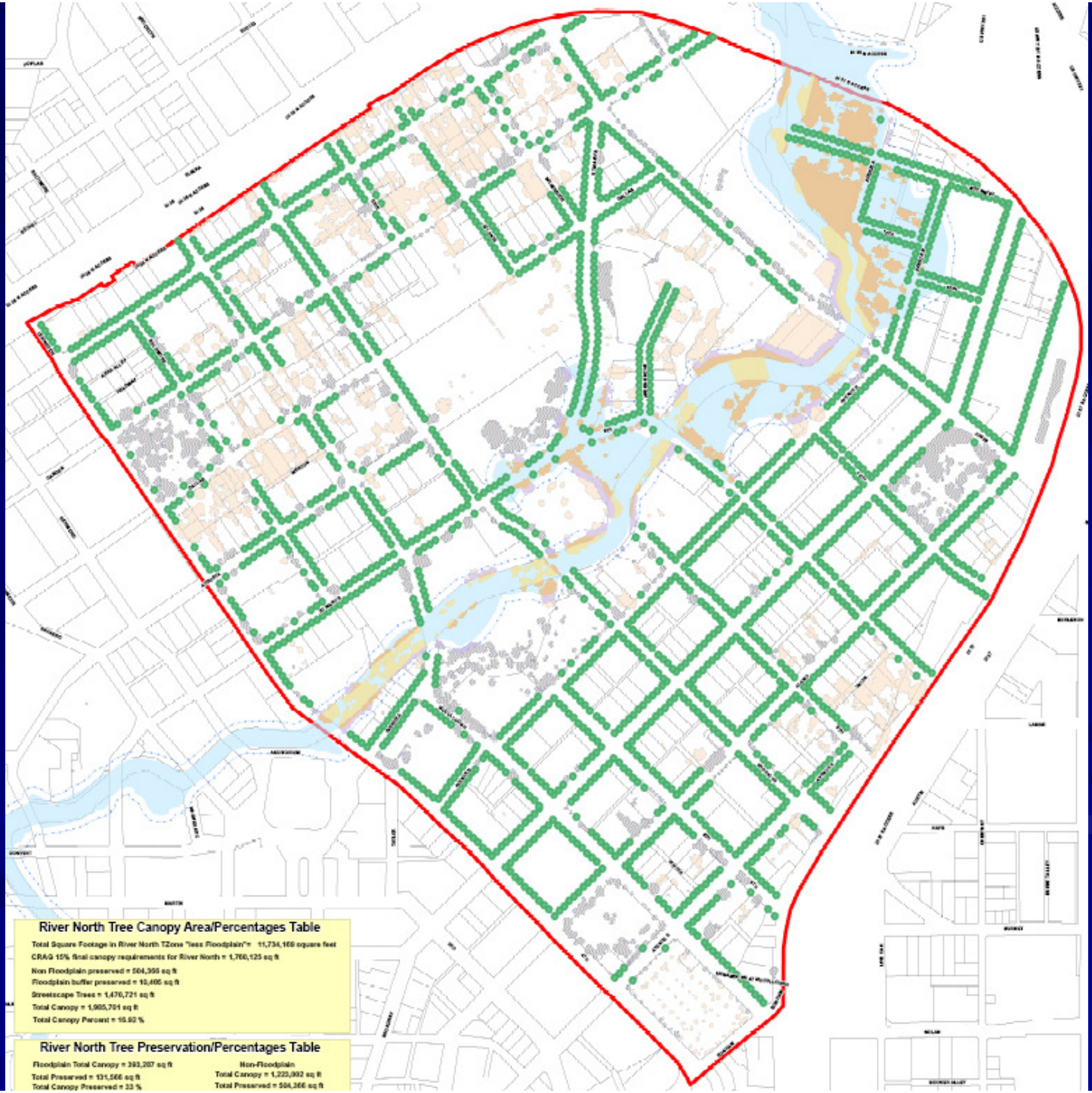
One Stop continued

- Parking lot shading trees = 28 trees
- 28 x 788 = 22,064 sqft
- Street trees = 24 trees
- 24 x 788 = 18,912 sqft
- Additional trees planted = 22 trees
- 22 x 788 = 17,336 sqft
- FINAL TREE CANOPY = 65,238 sqft
- 15% CRAG Final Canopy requirement = 34,630 sqft
- 25% Commercial Final Canopy requirement = 57,717 sqft


KEY
PRESERVED AREA
OPEN AREA
TREE STAND
IN OPEN AREA
TREE PRESERVATION NOTES
TOTAL EXISTING CANOPY . . . . . 894,260 SF
36% EXISTING CANOPY . . . . . 312,991 SF
TOTAL PRESERVED CANOPY . . . . . 347,062 SF
PRESERVED PERCENT OF CANOPY 38.8%

Tree Canopy Requirement for 25 acre site

- 25 x 43,560 = 1,089,000 square feet
- 1,089,000 x 25% = 272,250 sqft Final Canopy required
- Total Canopy Preserved = 347, 062 sqft
- No additional tree planting required to meet 25% Final Canopy Requirement
- Note: Canopy and Preservation requirements met without Landscape requirements.


River North Tree Canopy Area/Percentages Table
Total Square Footage in River North TZone "less Floodplain"= 11,734,169 square feet
CRAG 15% final canopy requirements for River North = 1,760,125 sq ft
Non Floodplain preserved = 504,366 sq ft
Floodplain buffer preserved = 10,405 sq ft
Streetscape Trees = 1,470,721 sq ft
Total Canopy = 1,985,701 sq ft
Total Canopy Percent = 16.92 %
River North Tree Preservation/Percentages Table
Floodplain Total Canopy = 393,207 sq ft
Total Preserved = 131,566 sq ft
Total Canopy Preserved = 33 %
Non-Floodplain
Total Canopy = 1,222,092 sq ft
Total Preserved = 504,366 sq ft

River North Tree Canopy Area/Percentages Table

Total Square Footage in River North TZone "less Floodplain"= 11,734,169 square feet

CRAG 15% final canopy requirements for River North = 1,760,125 sq ft

Non Floodplain preserved = 504,366 sq ft

Floodplain buffer preserved = 10,405 sq ft

Streetscape Trees = 1,470,721 sq ft

Total Canopy = 1,985,701 sq ft

Total Canopy Percent = 16.92 %

River North Tree Preservation/Percentages Table

Floodplain Total Canopy = 393,287 sq ft

Total Preserved = 131,566 sq ft

Total Canopy Preserved = 33 %

Preservation required = 80%

Floodplain Buffer Canopy = 86,614 sq ft

Total Preserved = 10,405 sq ft

Total Canopy Preserved = 12 %

Preservation required = 80%

Non-Floodplain

Total Canopy = 1,223,002 sq ft

Total Preserved = 504,366 sq ft

Total Canopy Preserved = 41.2 %

Preservation required = 30%

Questions ?

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